

Amend the Specification as follows:

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At page 10,

**[0042]** Preferably, the boosters or other coupled surface arranged for contact with the molding material in the mold cavity have a robustness and surface finishing characteristics suitable for production. The thickness of the temperature boosters is chosen specifically to obtain cavity temperatures that are elevated at portions of the mold cavity affected by the temperature boosters. The booster thickness is such that during mold filling stages, an area of the mold cavity that serves as a flow passageway for distributing molten molded material adjacent to the booster retains a temperature effective to keep the viscosity of the molten material low enough to flow readily. In this way, the temperature booster thickness is sufficient at thin points in the cross section of the mold cavity to retain a sufficient temperature to prevent obstruction, thus completely filling the mold for even a molded article that is very thin. This result is obtained according to the invention by providing a booster thickness according to the following equations

$$(T-T_s)/(T_m-T_s) = \text{erfc}(X)$$

$$~~X = Z/(2 \cdot (\alpha \cdot t)^{1/2})~~ \quad X = Z/(2 \cdot (\alpha \cdot t)^{1/2})$$

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**[0058]** Shear heating during melt flow also reduces the material viscosity. The reduction in viscosity is greater as the shear rate increases. According to the invention, cavity surface temperatures are elevated above the solidifying temperature at least long enough to ensure the mold fills completely, after which heat transfer from the boosters to the relatively colder dies cools the cavity and sets its

contents. To accomplish this, the thickness of the booster is determined from the following equations:

$$(T-T_s)/(T_m-T_s) = \text{erfc}(X)$$

$$\cancel{X=Z/(2\sqrt{\alpha t})} \quad \underline{X=Z/(2\sqrt{\alpha t})}$$

Where:

$T-T_s$  is the amount of temperature increase to allow at the die side of booster layer. A range of 0.1 to 5 degrees C is recommended and 0.1 degree C preferred.

$T_s$  is the temperature at the cavity surface side of the booster before contact by hot melt.

$T_m$  is the desired cavity surface temperature during filling. A range of solidifying temperature plus 10 degrees C to 100 degrees C is recommended and the melting point temperature is preferred for amorphous materials.

$\alpha$  is the thermal diffusivity of the booster layer material

$t$  is the time to fill the cavity

$Z$  is the thickness of the booster layer

$\text{erfc}$  is a complementary error function. Tables of  $\text{erfc}$  that provide the value for  $X$  associated with the number from the left side of the equation are available on the internet and the literature.

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